



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-1319; Directorate Identifier 2011-NM-143-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 777-200 and -300 series airplanes equipped with Rolls-Royce RB211 Trent 800 engines. This proposed AD was prompted by reports of events related to thermal damage of the thrust reverser (T/R) inner wall on Rolls-Royce RB211 Trent 800 engines. This proposed AD would require replacing the bleed valve parts and tubing with new parts and tubing on the left and right engines. Additionally, this proposed AD would require installing Aero-Engine database (AEDB) software in the airplane information management system (AIMS) hardware. We are proposing this AD to eliminate T/R thermal damage caused by excessive heat downstream of the 8th stage IP8 exhaust ports, which could result in T/R structural failure. This failure could result in large pieces of the T/R or adjacent components departing the airplane. A separated T/R piece could result in a rejected takeoff (RTO) and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust operations. Separated components could also cause structural damage to the airplane, damage to other airplanes, or injury to people on the ground.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; phone: 206-544-5000, extension 1; fax: 206-766-5680; e-mail: me.boecom@boeing.com; Internet: <https://www.myboeingfleet.com>. For Rolls-Royce service information identified in this AD, contact Rolls-Royce plc, P.O. Box 31, DERBY, DE24 8BJ, UK; telephone 011 44 1332 242424; fax 011 44 1332 249936. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Rebel Nichols, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6509; fax: 425-917-6590; e-mail: Rebel.Nichols@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-1319; Directorate Identifier 2011-NM-143-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received 14 reports of events related to thermal damage of the T/R inner wall on Rolls-Royce RB211 Trent 800 engines. The events have included air turnbacks, in-flight engine shutdowns, T/R inner wall panel sections and parts being separated from the airplane, collapse of the inner T/R inner wall panel, and engine fire loop fault messages.

Boeing issued Alert Service Bulletin 777-78A0059, dated February 24, 2005; and Special Attention Service Bulletin 777-78-0060, dated February 24, 2005; to provide instructions for inspecting the T/R inner wall panel structure and sealing the insulation

blankets to prevent hot under-cowl air from contacting the T/R inner wall panel. Since those service bulletins were released, there have been four T/R events on airplanes on which those service bulletins had not been fully accomplished and 10 T/R events on airplanes on which those service bulletins had been accomplished.

There are two separate causes of the thermal degradation. The first cause is the IP8 exhaust washing the outer side of the inner wall. This cause is addressed by this proposed AD through modification of the IP8 bleed system. The second cause is the inadequate thermal protection system. We are considering further rulemaking to address this cause.

This thermal degradation, if not corrected, could result in the T/R being damaged by excessive heat, which could result in thrust reverser structural failure. This failure could result in large pieces of the T/R or adjacent components departing the airplane. A separated T/R piece could result in an RTO and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust operations. Separated components could also cause structural damage to the airplane, damage to other airplanes, or injury to people on the ground.

Relevant Service Information

We reviewed Boeing Service Bulletin 777-75A0002, Revision 1, dated October 26, 2011. This service information describes procedures for replacing bleed valve parts and tubing (including IP8 bleed valve ducts, duct bases, HP3 air tubes and associated parts) with new parts and tubing on the left and right Rolls-Royce RB211 Trent 800 engines.

Boeing Service Bulletin 777-75A0002, Revision 1, dated October 26, 2011, refers to Boeing Special Attention Service Bulletin 777-31-0177, dated September 23, 2010, as a concurrent requirement. This concurrent service bulletin describes procedures for

installing the AEDB software, software part number 3110-BCG-00R-06, media set part number 243W0033-7, in the airplane AIMS hardware.

Additionally, Boeing Service Bulletin 777-75A0002, Revision 1, dated October 26, 2011, refers to Rolls-Royce Service Bulletin RB.211-75-G466, dated June 20, 2011, as an additional source of guidance for replacing bleed valve parts and tubing.

Other Relevant Rulemaking

We issued AD 2005-07-24, Amendment 39-14049 (70 FR 18285, April 11, 2005), for Model 777-200 and -300 series airplanes equipped with Rolls-Royce Model RB211 TRENT 800 engines. That AD requires inspecting the thrust reversers for damage of the insulation blankets, the inner wall, and the compression and drag link fittings; and repair if necessary. That AD also requires applying sealant to certain areas of the thrust reverser. That AD refers to Boeing Alert Service Bulletin 777-78A0059, dated February 24, 2005, for doing the required actions. That AD was prompted by two reports of thrust reverser failure; investigation revealed that the inner wall of the thrust reversers had collapsed from exposure to hot engine core compartment air. We issued that AD to prevent failure of a thrust reverser and adjacent components and their consequent separation from the airplane, which could result in an RTO and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust operation. If an RTO does not occur, these separated components could cause structural damage to the airplane or damage to other airplanes and possible injury to people on the ground.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the Boeing service information described previously.

Costs of Compliance

We estimate that this proposed AD affects 55 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replacement	16 work-hours X \$85 per hour = \$1,360	\$75,000	\$76,360	\$4,199,800
Installation of AEDB software	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$4,675

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2011-1319; Directorate Identifier 2011-NM-143-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 777-200 and -300 series airplanes, certificated in any category, equipped with Rolls-Royce RB211 Trent 800 engines, as identified in Boeing Service Bulletin 777-75A0002, Revision 1, dated October 26, 2011.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 78, Exhaust.

(e) Unsafe Condition

This AD was prompted by reports of events related to thermal damage of the thrust reverser (T/R) inner wall on Rolls-Royce RB211 Trent 800 engines. We are issuing this AD to eliminate T/R thermal damage caused by excessive heat downstream of the 8th stage IP8 exhaust ports, which could result in T/R structural failure. This failure could result in large pieces of the T/R or adjacent components departing the airplane. A separated T/R piece could result in a rejected takeoff and cause asymmetric thrust and consequent loss of control of the airplane during reverse thrust operations. Separated components could also cause structural damage to the airplane, damage to other airplanes, or injury to people on the ground.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Replacement of Bleed Valve Parts and Tubing

Within 36 months after the effective date of this AD, replace the bleed valve parts and tubing with new parts and tubing on the left and right engines, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-75A0002, Revision 1, dated October 26, 2011.

Note 1: The service bulletin accomplishment instructions might refer to other procedures. When the words “refer to” are used and the operator has an accepted alternative procedure, the accepted alternative procedure can be used to comply with the AD. When the words “in accordance with” are included in the instruction, the procedure in the design approval holder document must be used to comply with the AD.

(h) Concurrent Requirements

Prior to or concurrently with doing the actions required by paragraph (g) of this AD, install Aero-Engine database software, software part number 3110-BCG-00R-06, media set part number 243W0033-7, in the airplane information management system hardware, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-31-0177, dated September 23, 2010.

(i) Maintenance

Note 2: After accomplishing the actions required by paragraphs (g) and (h) of this AD, maintenance and/or preventative maintenance under 14 CFR part 43 is permitted provided the maintenance does not result in changing the AD-mandated configuration (reference 14 CFR 39.7).

(j) Credit for Actions Accomplished in Accordance with Previous Service Information

Replacing the bleed valve parts and tubing with new parts and tubing on the left and right engines in accordance with the Accomplishment Instructions of Boeing Alert

Service Bulletin 777-75A0002, dated January 12, 2011, before the effective date of this AD is acceptable for compliance with the corresponding replacements required by paragraph (g) of this AD.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD. Information may be e-mailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

(1) For more information about this AD, contact Rebel Nichols, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6509; fax: 425-917-6590; e-mail: Rebel.Nichols@faa.gov.

(2) For Boeing service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; phone: 206-544-5000, extension 1; fax: 206-766-5680; e-mail: me.boecom@boeing.com; Internet: <https://www.myboeingfleet.com>.

(3) For Rolls-Royce service information identified in this AD, contact Rolls-Royce plc, P.O. Box 31, DERBY, DE24 8BJ, UK; telephone 011 44 1332 242424; fax

011 44 1332 249936. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on December 5, 2011.

Ali Bahrami,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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12/12/2011]